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## LIMITATION OF THE CHEST INJURY ASSESSMENT BASED ON CADAVER TESTS

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Abstract

The severity of thoracic injury is determined according to two regimes of trauma: skeletal fractures (AIS 2, 3) of the rib cage and nonskeletal contusions (AIS 3) and lacerations (AIS 4-6), as indicated, of the viscera. The nonskeletal injuries have much higher clinical significance as far as the threat-to-life is concerned in the field situations; whereas, rib fractures are generally of secondary importance. Unfortunately, the obvious limitations of the cadaver test do not usually permit more than the counting of rib fractures in the final evaluation of the overall severity of resultant chest trauma. Comparison of cadaver and animal test data indicates that injury assessment of dead tissue is severely limited by deficiencies of the cadaver model, e.g., age, pathological changes due to previous diseases, degenerative changes, and lack of physiological functions. Statistical analysis indicates that the average impact response of a 65 year old cadaver would have a 40% greater probability of nonskeletal injury AIS 4-6) and an 80% greater probability of excessive skeletal injury (4 or more rib fractures) than a 40 year old specimen. Since the cadaver data does not necessarily produce information representative of the population of risk, it can serve only for a limited assessment of actual human injury potentials and needs to be normalized by applicable correction factors or verified by other experimental models.

